and principles of the subject in such a way as to "show how these principles fit into subjects of a more or less strictly professional or practical nature." The relation of these microörganisms to Agriculture and to Domestic Science is treated at length and well.

In the morphological part we naturally have chapters on Molds, Yeasts, Bacteria, Protozoa, and the so-called invisible microörganisms. The physiological section includes Metabolism, Effects of Physical and Chemical Conditions on the Microörganisms, and their mutual influences. Under applied microbiology are such divisions as microbiology of the air, of water and sewage, of the soil, of milk and milk products, of various special industries, and of the diseases of plants, of animals and of man.

A brief history of the advance of microbiology opens the volume.

FEEDING HABITS OF MACKEREL

Bullen (Jour. Mar. Biol. Assn., June 1912) gives some conclusions on the feeding of mackerel in the English Channel. It is claimed that the mackerel feeds in two ways: "First, by a system of filtration upon plankton organisms, and secondly upon prey of a large character which is hunted by sight." From March to June the mackerel were feeding exclusively on plankton,—first vegetable, and later the general zoôplankton. The author, by examination of stomachs of the fish, finds that there is considerable evidence for believing that they are incapable of assimilating the larger prey when feeding largely on the minor forms of plankton. Later still they passed to larger zoôplankton and to such larger animals as were presented. It is concluded that there are two main types of the active "selective" feeding, and that the mackerel can subsist on these for reasonable periods of time, irrespective of the season. One of these is the selection of individual prey; the other is the selection of plankton organisms where they occur in great numbers, even tho the individual organism is too small for the mackerel to distinguish. These conditions apparently determine the movements of the mackerel and the method of catching them, and a knowledge of the facts may well assist in an understanding of the problems of the fisheries.

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